

IN THE CLAIMS

Please amend the claims as follows:

Listing of Claims:

1. (Cancelled)

2. (Cancelled)

3. (Cancelled)

4. (Cancelled)

5. (Cancelled)

6. (New) An active antenna having a multilayer structure comprising:

an antenna substrate on which an antenna is disposed;

a circuit substrate on which an amplification circuit for a signal transmitted/received through said antenna; and

a heat radiation plate interposed between said antenna substrate and said circuit substrate,

wherein said heat radiation plate includes a communication hole that communicates said antenna substrate side with said circuit substrate side.

7. (New) The active antenna according to claim 1, wherein said antenna is disposed apart from said communication hole on said antenna substrate and is supplied power from said communication hole through a feed line.

8. (New) The active antenna according to claim 2, wherein said communication hole is slot-shaped, and

said feed line is disposed in a direction perpendicular to the longitudinal direction of the slot shape of said communication hole on said antenna substrate.

9. (New) The active antenna according to claim 3, wherein said length in the longitudinal direction of said communication hole is determined based on both the thickness of said heat radiation plate and the frequency used of said antenna.

10. (New) An active antenna comprising:

an antenna;

a high-output amplifier that amplifies a signal and outputs the signal to said antenna;

a low-noise amplifier that amplifies the signal received by said antenna;

an antenna substrate that includes said antenna and a feeder circuit that feeds power to said antenna;

an RF substrate that is mounted with said high-output amplifier and said low-noise amplifier which are active devices; and

a heat radiation block inserted between said antenna substrate and said RF substrate,

wherein said antenna substrate and said RF substrate are connected through an electromagnetic field by a connection slot.

11. (New) The active antenna according to claim 5, further comprising:

a plurality of said antennas;
the same number of said high-output amplifiers as said antennas;
a splitter that splits a signal into as many signals as said antennas and outputs the signals to said high-output amplifier; and
a combiner that combines the signals received by said antennas and outputs the combined signal to said low-noise amplifier,
wherein signals are spatially combined.

12. (New) The active antenna according to claim 6, wherein a variable phase circuit is interposed between said high-output amplifier and said splitter or between said high-output amplifier and said antenna.

13. (New) The active antenna according to claim 6, wherein a variable gain circuit is interposed between said high-output amplifier and said splitter or between said high-output amplifier and said antenna.

14. (New) The active antenna according to claim 6, wherein a variable phase circuit is interposed between said combiner and said antenna.

15. (New) An active antenna manufacturing method comprising:

a step of providing a slot-shaped through hole in a heat radiation plate; and

a step of forming a multilayer structure comprising an antenna substrate on which an antenna is disposed, a circuit substrate on which an amplification circuit for a signal transmitted/received through said antenna and a heat radiation plate provided with a through hole interposed between said antenna substrate and said circuit substrate.